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ABSTRACT

The purpose of this monograph is twofold: (1) to describe the advantages and disadvantages of mail questionnaires as survey research instruments, and (2) to provide guidelines for constructing and utilizing mail questionnaires with a view to maximizing response rates and minimizing response biases. Construction of an effective mail questionnaire is a great challenge. The instrument must not only have well-designed questions; it must also have a format which encourages respondents to complete it. Pilot testing of questionnaires is necessary to assure effective instruments. Cover letters, introducing the researchers and the purpose of the study to the respondents, should be brief and to the point. Non-response to questionnaires can be dealt with through follow-ups, advance notification, postage, and monetary incentives. Insofar as possible, these recommendations for design and use of mail questionnaires are based on empirical data. (Tabular summaries of research findings are appended.) (BW)

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Designing and Utilizing Mail Questionnaires in Educational Research

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by James T. Humphries

Department of Vocational Education Studies

MONOGRAPH SERIES 83.1

Southern Illinois University
at Carbondale

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PREFACE

The Publication and Research Office for Vocational Education (PROVE) was established in 1982 within the Department of Vocational Education Studies at Southern Illinois University-Carbondale. As a coordinating body for research and publication within the Department, PROVE has sought to provide faculty with opportunities to publish research reports on topics of interest to the national community of vocational educators.

This is the first monograph to be published and distributed by PROVE. The monograph can readily be used to:

- aid vocational education research as a resource document
- complement instructional resources used for graduate research courses in vocational education.

This monograph entitled "Designing and Utilizing Mail Questionnaires in Vocational Research" was prepared by James T. Humphries, School of Technical Careers. Professor Ronald Stadt, Department of Vocational Education Studies, coordinated the editorial activities of this monograph.

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May, 1983

DESIGNING AND UTILIZING

MAIL QUESTIONNAIRES IN EDUCATIONAL RESEARCH

by

James T. Humphries

INTRODUCTION

"Many of the questionnaires that are received by . . . educators appear to have been thrown together by the graduate student during the short break between lunch and her two o'clock class" (Borg & Gall, p. 295). So wrote the authors of an educational research text, with some justification. Paradoxically, mail questionnaires are among the most popular tools of educational research and are also among the most abused. Popularity of this form of survey research stems from cost, ease of data tabulation, and other advantages. Misuse of mail questionnaires can be traced to two factors: (1) researchers fail to see the place of this data-gathering technique in the overall picture of research procedures and (2) researchers underestimate difficulties of constructing and utilizing high-quality questionnaires.

Contrary to perceptions of beginning educational researchers, construction of valid, reliable mail questionnaires is an exacting and time-consuming task. At first blush, what could be easier than deciding upon a topic, writing a few interesting questions and mailing them to knowledgeable people? Mouly (1978) aptly observed that "the student confuses the questionnaire with ordinary conversation, in which it is possible to correct misinterpretations through repetition of the question or further explanation. He fails to realize that once the questionnaire is in the mail, nothing can be done to improve it" (p. 191).

The purpose of the monograph is twofold: (1) To describe the advantages and disadvantages of mail questionnaires as survey research instruments and (2) To provide guidelines for constructing and utilizing mail questionnaires with a view to maximizing response rates and minimizing response biases. Insofar as possible, recommendations for design and use will be based on empirical data. (Tabular summaries of research findings are appended at the end of this monograph for the readers convenience.) There is no easy formula for construction and utilization of mail questionnaires. Research situations are unique. Many special problems cannot be resolved via established approaches.

ADVANTAGES AND DISADVANTAGES OF MAIL QUESTIONNAIRES

Researchers may choose one or more of many data-collection methods. If the survey method is chosen, researchers must select an appropriate data-gathering technique. The three most common are mail questionnaire, personal interview, and telephone interview. The mail questionnaire is undoubtedly the most popular of these three data-collection procedures. Because this monograph concerns preparation of mail questionnaires, interested readers should consult the bibliography to identify references which discuss advantages and disadvantages of personal and telephone interview methods. Advantages and disadvantages of mail questionnaires are discussed here.

Advantages

1. Geographic distribution: Mouly (1978) noted that mail questionnaires afford wide geographic coverage. They also enable researchers to communicate with subjects who would otherwise be difficult to reach. Increased geographic distribution may increase validity or statistical significance by promoting the selection of a larger sample.

2. Financial considerations: Mail questionnaires are usually less expensive than other survey research methods. Sellitz (1959) wryly noted that "Questionnaires can be sent through the mail; interviewers cannot" (p. 351). The mail questionnaire technique is less costly per subject only so long as the response rate is high (Benson, 1946).

3. Respondent reflection: Respondents are allowed more time to consider answers. Respondents may need time to refer to records or other sources of information to answer questions correctly (Mouly, 1978).

4. Standardized question presentation: All respondents receive the same questionnaire. That is, all are afforded a uniform presentation (Berdie & Anderson, 1974). The format, order of questions and accompanying materials are identical in each case. This may not always be the case, especially where interviews are conducted in person or over the telephone.

5. Less bias: By virtue of their impersonal formats, mail questionnaires put respondents more at ease than interviews. This enables respondents to answer accurately and willingly (Jahoda, Deutsch & Cook, 1962).

6. Time considerations: Generally speaking, mail questionnaires are a relatively fast method of surveying a sample. Moser and Kalton (1972) noted that "time must be allowed for late returns and responses to follow up attempts. As a result, a period of a month or more is probably needed" (p. 58). Mail questionnaires can also be distributed so that all respondents receive them at about the same time, the better to prevent uncontrolled changes in knowledges and attitudes from contaminating results.

7. Ease of tabulation: If questionnaires are well constructed, tabulation of data for analysis is simplified. Berdie and Anderson (1974) point out that "most questionnaires consist of objective questions which can be arranged to facilitate either machine scoring or key punching" (p. 19).

Disadvantages

1. Level of questions: Moser and Kalton (1972) note that only questions which are simple and straightforward enough "to be understood with the help of printed instructions and definitions" (p. 290) are appropriate. Overly complex questions produce misunderstandings which may invalidate the study.

2. Respondent completion: Researchers cannot ensure that respondents are the persons for whom questionnaires were intended. In one study, signatures of intended respondents were compared with those of actual respondents. Approximately 10% of signatures were not those of intended respondents. Apparently, many persons delegate responsibility for responding to mail questionnaires.

3. Mailing lists: Mailing lists may be incomplete, inaccurate, biased or simply unavailable. Erdos (1970) found that well over 10% of non-respondents did not actually receive a mailed questionnaire.

4. High non-response: One of the biggest problems in questionnaire use is the spectre of high non-response. Because non-respondents may differ from respondents in fundamental ways, researchers cannot know whether bias has entered the data. Non-response may invalidate otherwise well

designed studies. Even the best techniques for sampling non-respondents do not yield high return rates. Only by sampling the non-respondents can the researcher know whether bias has entered the data.

5. Item independence: Because the respondents can read all questions before answering a questionnaire, no item can be considered independent of others (Moser & Kalton, 1972).

6. Checking answers: Answers must be accepted as final, i.e., almost without exception no provision is made to change answers or to check them for accuracy. Also, motivations of the respondents are difficult to assess via mail (Moser & Kalton, 1972).

7. Spontaneity of answers: Mail questionnaires may or may not elicit spontaneous answers. Even if directed to respond spontaneously, some respondents can make deliberate choices. Mail questionnaires are more applicable to considered responses (Moser & Kalton, 1972).

8. Respondent perceptions: Respondents' perceptions about what they believe, like, or think may not be accurate (Tuckman, 1978). This disadvantage applies as well to other survey techniques. In addition, answers given may reflect what ought to be rather than what is. Answers may reflect what subjects think researchers want to hear.

9. Prejudice against questionnaires: Berdie and Anderson (1974) suggested that inaccurate information may be given by people inundated by poor questionnaires or distrustful of them as research tools.

10. Impersonality of questionnaires: The same authors suggested that many people may be offended by the impersonal nature of questionnaires, i.e., feel that they are an insignificant part of the study.

Decisions to use mail questionnaires should be based on careful consideration of advantages or disadvantages and viewed in light of research questions. Disadvantages should not all be taken at face value. Careful instrument design can overcome some of the limitations listed above.

Researchers who decide against using mail questionnaires as primary data-collection instruments may use alternatives such as: (1) personal interviews, (2) telephone interviews, (3) observation, and (4) data banks and records. Consideration of these data-gathering techniques is outside the scope of this monograph. The annotated bibliography contains items which treat these data-collection procedures.

If researchers decide that the mail questionnaire is an adequate and appropriate method of data collection, the task of questionnaire construction may be initiated. Researchers should be absolutely certain that the mail questionnaire is the most efficient means of data collection. Respondents do not appreciate receiving questionnaires which contain requests for information which can be obtained elsewhere as readily and as accurately. The following "Open Letter to a Graduate Student" illustrates this point.

> Dear Sir:
>
> In reply to your letter and questionnaire concerning your research project, I would like to give you my candid reaction to the kind of procedure which you propose to use. I assume that your major professor knows about your questionnaire and I want him to read this letter. If your request were singular in its kind, I might not take

the trouble, but it seems to represent a pattern of graduate "research" technique which is spreading--a pattern which in my opinion, involves not only unnecessary imposition on the time of busy professors, but also a decline of scholarly standards.

First of all, you are asking in the questionnaire certain questions which you could easily answer for yourself by consulting "Who's Who in America" or the university catalogues.

More serious is the objection I have to the rest of your questions; you are asking me for my opinion on very complex questions and you formulate your questions in a way that indicates you expect a dogmatic answer. To do real justice to these questions which concern the objectives and methods of....sociology, I would have to write an essay or several papers. It is hard to imagine that you really expect me to do this for you; if you do not, then why ask these questions? Furthermore, it so happens that I have expressed my ideas on these matters in several publications; I admit that my opinions are, in some cases, not stated explicitly but by implication. Now there is an old and well established way of getting information about other scholars' opinions and theories; that is, by reading and critical interpretation. There is no substitute for this. My advice to you is to forget about the questionnaire and to study the literature (Heberle, 1951, p. 549).

QUESTIONNAIRE CONSTRUCTION

Construction of an effective mail questionnaire is a great challenge. The instrument must not only have well designed questions, it must also have a format which encourages respondents to complete it. Before researchers can design effective questions, they must understand several types of questions and rating scales.

Types of Questions

Generally speaking, there are two basic types of questions: open and closed response. Closed-response questions provide a series of response choices, constructed by the researcher, not the respondent. An example of a closed-response question is:

In your department, which one of the following most influences selection of research assistants? (Mark X)

_____ 1. Departmental chairperson
_____ 2. Director of graduate studies
_____ 3. Faculty committee
_____ 4. Individual faculty members
_____ 5. Department has no research assistants

This type of question has obvious advantages. It is easy to answer, easy to tabulate, generally gets better rates of return, and minimizes chances of misinterpretation. But, this type of question is not without considerable disadvantages. First, the closed-response question is difficult

to construct. A researcher must be careful to include all possible responses or the question may be invalid. For instance, as regards the above question, other people or things may influence the choice of graduate students. Second, many respondents may be reluctant to admit ignorance of a subject about which they think they ought to know. To save face, they may randomly choose a response other than "don't know." Respondents may choose the more "socially desirable" answer. For example, when asked why they left teaching, ex-teachers might choose "to spend more time with my family" over "to be higher paid."

Open-response questions are followed by space in which respondents are to write answers. For example, a researcher may ask, "Why did you leave teaching for other work?" This question does not put "ideas" into respondents' minds. Open-response questions allow free, unstructured, spontaneous responses. Payne (1951) stated that this type of question gives a respondent the chance to have his own say-so with ideas which more restrictive types of questions would not permit him to express. Courtesy may require that when we ask a person's opinion we should at least give him the opportunity to state the ideas on the subject that are uppermost in his thinking, even though they may not be important for the purpose of the survey. The respondent should be satisfied that the interviewer asks the right questions or else he might think questioners are stupid--and in some cases he may be right (p. 50).

Open-response questions have inherent disadvantages. Foremost among them is inordinate amount of time needed to respond to such questions. Many respondents will not take time to answer such questions. Thus, the open-response type of question is notorious for generating low response rates. Another problem, especially in studies which employ statistical procedures, is how to quantify responses. What criteria are to be used? Key terms in the response? Length of response? Numbers of polysyllabic words? In descriptive studies, such difficulties might be minimal; but when estimates of quantity are essential, open-response questions pose serious problems--at least in time. Often it is well to use both types of questions but mostly closed-response types. Mouly (1978) suggests that "the open-response type be used in the early stages of investigation to define the field and the closed when the specific aspects of the problem are more precisely delineated" (p. 192).

Rating Scales

Many educational researchers study aspects of behavior such as attitudes, values, adjustment, and leadership. Such investigations require subjective judgements. Rating scales can help educational researchers classify and quantify findings.

The concept of rating parallels the concept of measurement. Rating and measurement involve classification on continua. However, rating implies that the rater be able to exercise ability to estimate the status of the trait or phenomenon under investigation. Rating scales can be classified into one of three major types: (1) The summated scale (Likert-type), (2) The equal-appearing interval scale (Thurstone-type), and (3) The cumulated scale (Guttman-type).

A scale may be defined as "a set of numerical values assigned to subjects, objects or behaviors for the purpose of quantifying and measuring qualities" (Ary et al. 1979, p. 186). Stevens (1951) described four types of measuring scales which can be used in questionnaires. These are the nominal, ordinal, interval, and ratio scales.

Nominal scales involve classification into categories. For example, a nominal scale might be types of subjects, teachers, students, or schools. Sex, political party affiliation, ethnic background, or geographic location are examples of nominal scales which are used to categorize people. The key feature of nominal scales is that they do not entail rankings in linear or hierarchical fashions.

Ordinal scales are nominal scales with rankings added. Ranking may be done in many ways, e.g., greatest to least, largest to smallest, strongest to weakest, best to worst. The key feature of ordinal scales is that differences between ratings need not be the same. For example if three people are classified as tall, taller, and tallest, the differences between tall and taller and between taller and tallest are not necessarily the same.

Ordinal scales are commonly used to measure attitudes. Two rating techniques have been widely used: the Likert scale and the semantic differential.

The Likert scale is a commonly used attitude measure. Usually, a positive or negative statement is followed by a five-point response, i.e., strongly agree, agree, undecided, disagree, and strongly disagree. Each response may be scored with descending or ascending numbers from one to five. For example:

The PTA influences school improvements.

SA	A	U	D	SD
(5)	(4)	(3)	(2)	(1)

Interval scales differ from ordinal scales in that distances between ratings are equal. For example, on a ruler the distance between one and two inches is the same as that between three and four. The most widely used interval scaling technique is Thurstone's method of equal appearing intervals. This technique is also used primarily for attitude assessment. Thurstone devised a method for assigning values to each scale division. Each scale division represents degrees of favorable attitude. Perhaps because it is a time-consuming and exacting process, the Thurstone technique is seldom used. The researcher who wishes to use this technique should examine Thurstone and Chave (1929).

The semantic differential, devised by Osgood et al. (1957) is useful for assessing connotative aspects of people's attitudes toward objects, people or situations. Semantic differentials are bipolar adjectives, separated by seven spaces:

autocratic ___: ___: ___: ___: ___: ___: ___: democratic
confident ___: ___: ___: ___: ___: ___: ___: vascillating

Respondents are asked to place a check somewhere between each adjectival pair, depending on how they feel. By scoring each space on a continuum from +3 to -3 researchers can determine whether subjects' attitudes are positive or negative. Such instruments can also be used to establish attitudinal patterns which can be compared to other subjects or to the same subject over time.

Question Construction

The literature on questionnaire item construction is extensive and bewildering. Many of the "rules" of item construction reflect authors'

academic affiliations or peculiar research experiences. Therefore, it is exceedingly difficult to draw generalizations. Following are concepts appropriate to questionnaire item construction.

1. Questions should be clearly stated with simple vocabulary, grammar and syntax. Above all eschew obfuscation. Respondents cannot be expected to answer questions which are not understood. Backstrom and Hursch (1963) recounted an amusing story to illustrate misperceptions which can occur when researchers employ vocabulary beyond the experience of subjects. A survey was taken on attitudes of people living in the rural south in the 1940's. They were asked if they favored "government control of profits." Almost unanimously respondents replied that "prophets" ought to be regulated only by God.

   Obviously, adverbs and adjectives such as several, regularly, occasionally, a significant number of, most, and usually should not be used within questions. How often is "regularly"? Vague questions encourage vague answers and vague answers destroy validity and reliability. Investigators should replace vague words with precise terms, such as numerals.

   Long, complex sentences should be avoided. Respondents often forget the first part of a long question before the end is reached. Backstrom and Hursch (1963) noted that long questions "tax (the respondent's) comprehension and quickly exhaust his patience" (p.91).

   The admonition that questions should be stated "as clearly as possible" requires some qualification. For example, questions may be deliberately designed to be ambiguous for purposes of projective measurement. However, such instances are rare exceptions to the rule.

   It is very difficult for the person who is writing questions to be objective enough to assess clarity and simplicity of questions. Travers (1978) pointed out that although it is possible to ensure that vocabulary is simple by using Lorge and Thorndike's (1944) or Flesh's readability formula, grammar and syntax should be assessed via a pilot study. Pilot studies are addressed later in this monograph.

2. Questions should be specific. Consider the question, "Are you satisfied with your graduate studies?" This question is too general. That is, an individual can respond on the basis of many different and possibily conflicting considerations. A student may be satisfied with some courses but not others or dissatisfied with housing and pleased with library facilities. Such general questions seldom yield reliable data.

   Questions may also be too specific. For instance, a researcher may ask teachers to recall how many students they advised about career choices during the past year. Rare would be the teacher who would recall a specific number. Such a question could be rephrased to elicit responses to ranges, e.g., 0-10, 10-20, 20-40, 40-60.

   Related to the problem of specificity is the so-called "double-barreled" query or questions with multiple meanings. For example, the question "Is the instructor interested in and available for out-of-class conferences?" may be a double-barreled question. The instructor may be interested in such meetings but may not be available or vice-versa. It is virtually impossible to determine which part of a multiple question a respondent is answering. Respondents may feel one way regarding one part of a question and quite another way regarding the other part(s).

3. Loaded questions should be avoided. Backstrom and Hursch (1963) stated that "a question is loaded when something in the question suggests to the respondent that one particular response is more desirable than another" (p. 88). Warwick and Lininger (1975) suggested that loading takes place in several ways:

   a) Partial mention of alternatives: An example of this type of biased question is "Generally, how do you spend your free time, watching TV, reading books, or what?" This type of question may be improved by mentioning all of the possible alternatives or none of them.

   b) Emotionally charged words: Often if the words used in the question carry heavy positive or negative connotations, respondents may focus on these words, while neglecting to answer the intended question. Examples of such emotionally laden terms are "progressive educator", "permissive classroom", "intelligent", "motherly", "lower class", "middle class", and "big business". Words like these do not provide neutral frameworks for the respondent.

   c) Appeals or threats to self-esteem: Warwick and Lininger (1975) remarked that "the question designer must be continually alert for options which either flatter the respondent's self-image or injure his pride" (p. 144). For instance, many people in middle management positions may describe themselves as "executives" because this term is bound up with a person's self-esteem.

4. Avoid leading questions. Warwick and Lininger (1975) defined a leading question as one which "pushes the respondent in the direction of a certain answer, either by implication or outright suggestion" (p. 142). The respondent may be tricked into answering "yes" to a question if it is prefaced by the phrase "Wouldn't you agree?" Phrasing of questions may imply either affirmative or negative answers. For example, the form of this question almost demands a negative answer: "You don't think teachers are overpaid, do you?" This is an extreme example. But, many questions used by would-be researchers hint at desired answers. Many respondents unconsciously give researchers desired answers and thus produce biased responses. Questions should, therefore, give no indication regarding the preferences of researchers or their sponsors.

   It may not always be desirable to avoid leading questions. Gordon (1969) submitted that validity of leading questions may be improved if respondents have accurate information clearly in mind. However, respondents often tend to withhold it, either because a correct answer would violate etiquette requirements of the situation or a correct answer would be potentially ego-threatening, because it admits a violation of public ideals of some type. If respondents either accept these ideals as valid or assume the questioner does, that is, if trust is established, leading questions can be useful even if they lead in directions contrary to public ideals (p. 215).

5. Embarrassing questions should be avoided. Oppenheim (1966) stated that a question can be embarrassing to respondents for several reasons: "because it asks for socially disapproved attitudes or behavior, because it deals with very private matters or because it requires low prestige answers. Social investigators sometimes forget how sensitive people can be and rush in where angels fear to tread" (p. 64). On the other hand,

if the atmosphere created by a questionnaire is permissive and respondents' anonymity can be assured, this problem can be overcome.

Erdos (1970) offered a helpful suggestion for dealing with embarrassing questions which ask people to categorize themselves. He observed that "no one cherishes the idea of being in the lowest category--for this reason it is advisable to include categories which are lower than the answers expected" (p. 65). For instance, if a researcher is asking about salaries of educators and is relatively sure that none are under $11,000, several lesser categories should be listed among the responses. By the same token, Erdos noted that nobody likes to admit ignorance or inexperience. Questions which deal with respondents' knowledge, training, or experience must be designed with special care so that they protect respondent egos.

6. Presumptive questions should be avoided. Presumptive questions presuppose certain things about respondents. For instance, in surveying high school shop teachers, the question, "How many years of college training do you have?" presumes that all respondents have attended college. Such may not be the case. Consider the question "Do you still design poor questionnaires?" Two faulty assumptions are made: (1) that the respondent does design questionnaires and (2) that he/she likely still does it poorly. Question designers should ensure that questions apply to all respondents. Too many "if applicable" appendages to questions give rise to the thought "many of these questions do not apply to me. Why am I completing this questionnaire?" Why, indeed.

7. Assure that enough response options are included. Consider the question "How many years did it take you to complete your Ph.D.? One___ Two___ Three___ Four___." Some respondents may have completed degrees so far in the past that the exact number of years has been forgotten. In this case, a "don't know" or "uncertain" category should be included. Validity and reliability are enhanced when every possible answer is anticipated by response options of closed response items.

The literature contains a great many suggestions for constructing specific kinds of questions. The above guidelines pertain to all manner of questions. Researchers who observe them will avoid common pitfalls.

QUESTIONNAIRE FORMAT

Appearance and arrangement of items can contribute to questionnaire effectiveness. Respondents' first impressions of a questionnaire may be a decisive factor in choices between consigning it to a wastebasket or completing it. Levine and Gordon (1958) believe that "once the respondent takes the effort to read it, he has some psychological commitment to complete it" (p. 571). Following are considerations for questionnaire design:

1. Questionnaires should be attractive and appealing. Some authors suggest that colored paper and/or ink are more eye-catching. They submit that respondents are more likely to recognize and complete colored questionnaires. Although this suggestion may seem obvious, it has little empirical substantiation. In fact, one author (Erdos, 1970) suggested that colored paper be avoided because it resembles "junk mail". One study (Pucel et al., 1971) seems to demonstrate that response rates to colored questionnaires are significantly greater than to white questionnaires. This conclusion should be treated with caution because

(1) their N's were rather small (about 98), (2) their p values were large (between 0.2 and 0.3), and (3) they used the chi-square statistic to test differences in return rates between 11 different groups of treatments, of which a colored questionnaire was one. It is inappropriate to test a group with a chi-square statistic, find significant differences in the group, and then single out one specific comparison as significant. Chi-square should be used only to test hypotheses about frequency distributions as total entities.

2. Items should be grouped topically and in logical sequence. Logical sequencing enables respondents to provide accurate information which makes their task easier (Levine and Gordon, 1958).

3. Initial items should be interesting and non-threatening. The rationale behind this suggestion is that disinterested respondents may be influenced to discard questionnaires because of boredom or threat (Warwick & Lininger, 1975). Dillman (1978) suggested that questions which respondents may perceive as socially useful should appear early in a questionnaire.

4. Transitions between sections should be as smooth as possible. The more unrelated the sections, the more respondents may feel they are answering "unrelated quiz questions" (Berdie & Anderson, 1974, p. 35).

5. Ensure that all questions apply to the entire sample. Do not write a group of questions for a sub-group of the sample. Berdie and Anderson (1974) submitted that "such sections may lead respondents to believe the form is not appropriate for them or it may cause frustration and result in fewer completed forms" (p. 35).

6. Instructions should be briefly and clearly stated, prefacing applicable sections. They should be printed in italics or bold face type to distinguish them from questions. If directions have to be complex and thus likely unclear, examples may be given.

7. Dillman (1978) recommended that responses be made by circling rather than checking or X-ing. He argued that fewer ambiguous markings result if respondents are instructed to circle choices.

8. Responses should be arranged vertically under questions. Dillman (1978) suggested that this reduces confusion and omission because people are used to moving down the page. He also recommended that questions be lower case and that response options be upper case. Suggestions 6, 7, and 8 are illustrated in this example.

   1) Who has primary responsibility for discipline in public schools? (Circle one)

      a. CLASSROOM TEACHER
      b. GUIDANCE COUNSELOR
      c. DEAN

Paper

Proper selection of paper can enhance utility and appearance of questionnaires. Erdos (1970) suggested that the stock used should be pleasant to look at, substantial to handle, thick enough to be printed on

both sides without showing through, suitable for writing on with pen or pencil and hardy enough to take some handling in tabulating (p. 40). Dillman (1978) recommends using "white or off-white paper, which is somewhat lighter and more opaque than the widely used 20 point mimeo paper" (p. 121).

Printing

Almost all investigators recommend avoidance of mimeographed or dittoed reproduction. Ruling out these two methods leaves photo reproduction of a typed original (preferably on a variable space machine) or offset or letterpress printing. Although it is most expensive, typesetting may be preferable because it combats spacing problems. Erdos (1970) recommended Times Roman type face and 10-point for general copy, 9-point for check lists, and 8-point for column heads.

While not yielding the quality appearance of typeset copy, offset can provide good quality at lower cost. Long questionnaires may be typed on large paper and photographically reduced to requisite size. If this process is used, care should be taken to assure that final copy is legible without aid of a magnifying glass.

Dillman (1978) recommended using booklet form for mail questionnaires larger than one printed page. He submitted that the professional appearance of booklets, coupled with the fact that they look deceptively short and easy to complete, assures large response rates. The evidence supporting this contention is largely anecdotal, but seems to make some sense. Obviously, postage would be less. Dillman prescribed that:

1. Questionnaires be printed on 8 1/4" by 12 1/4" paper, folded in the middle and stapled if they contain more than one page. Such booklets measure 6 1/8" by 8 1/4". Dillman stated that together with business size envelopes such questionnaires weigh less than one ounce and thus reduce mailing costs.

2. Questionnaires should be typed on carbon-ribbon electric typewriters, using 12-point elite type on 8 1/2" by 11" paper. The type should be confined to a 7" by 9 1/2" space on the paper and photoreduced to 79% of the original size. Nothing should by typed on front and back covers.

3. Front covers should be reserved for:

    a) titles of studies
    b) eye-catching graphic illustrations
    c) necessary directions
    d) names and addresses of study sponsors

4. Back covers should include spaces for comments respondents may wish to make, words of thanks for participation, and space for respondents to check whether or not they want a report of findings.

Layout

Proper layout of questions gives the impression that a questionnaire is easy to complete. Erdos (1970) recommended that "the page should never be overcrowded; it should provide decent margins, white space to separate solidly printed blocks, and the often unavoidable tabular form...should be kept to a minimum. One of the most unfortunate impressions a questionnaire can make it to remind people of an income tax form" (p. 45). Achieving an effective layout is not easy. It may be a good idea to pilot test several

different layouts on a small group of respondents, asking them which looks easier and less cluttered. Persons with experience in design and layout of questionnaires may be consulted for the same purpose.

THE PILOT TEST

Although omitted by many researchers, pilot testing of questionnaires is necessary to assure effective instruments. Neglecting pilot tests is false economy. Pilot studies cost time and money but can greatly enhance validity. Backstrom and Hursch (1963) note that "no amount of intellectual exercise can substitute for testing an instrument designed to communicate with ordinary people." (p. 146). Savings in reduced numbers of follow-ups alone are likely to be considerable.

Research on the success of pilot testing in detecting faulty questions is almost non-existant. One study (Hunt et al., 1982) deliberately introduced errors in question design by inserting, for instance, ambiguous and loaded questions, and missing alternatives. Only 12.5% of the errors were detected through the pilot test. The pilot test, although important, should not be depended on too heavily to correct a poorly-designed questionnaire.

In addition to pilot testing questionnaires with small sub-samples, Dillman (1978) recommended soliciting assistance from two other groups: (1) colleagues who are familiar with study purposes and survey design principles and (2) potential users of study results. For example, if a college plans a needs assessment regarding proposed programs, researchers should contact potential users of the survey, such as administrators and members of the board of trustees.

Pilot test questionnaires should have ample space after each question for respondents to make comments. The introduction to a questionnaire should ask respondents to make several evaluations:

1. Are any questions ambiguous or too difficult?

2. Are additional response options necessary for any questions? Payne (1951) suggested adding "Other _____ (please specify)" to permit respondents more options.

3. Does the questionnaire <u>appear</u> easy to complete? If not, why?

4. Were you willing and able to provide all information requested? Erdos (1970) suggested that researchers "may find that the respondents simply do not know the answers to some of our questions or that they are not willing to divulge them" (p. 87).

When questionnaires are returned, researchers should examine response choices as well as written recommendations. Unanswered questions and questions which all respondents answer the same way should be redesigned.

After questions have been examined, data should be subjected to an analysis similar to the one which will be performed on results of the entire survey. In this way, researchers can determine whether methods to quantify and analyze data are appropriate. If they are not, they can be revised to better suit the purpose of the study. Some questions may have to be revised to produce data which are more quantifiable.

COVER LETTERS

Cover letters, or letters of transmittal as they are sometimes called, introduce researchers and the purpose of the study to respondents. They should be brief and to the point--never longer than one page.

1. Study purpose should be stated briefly. Dillman (1978) suggested that socially useful aspects of a study should be emphasized. Students should not indicate that results will be used in a thesis or dissertation study.

2. Respondents should be told that they are important, integral parts of the study. Studies of different appeals have shown that altruistic appeals are most effective.

3. How data will be used should be explained in cover letters. Because most researchers use a coding system to identify non-respondents, use of the word "anonymous" is inappropriate. It is likely best to indicate that respondents' identities will be kept confidential. A statement to this effect is usually enough to satisfy respondents' desire for anonymity.

4. It is well to obtain support and sponsorship of a professional organization to which a majority of respondents belong. Such sponsorship would be mentioned in cover letters. This is especially important if the questionnaire is lengthy.

5. Dillman (1978) recommended that researchers convey willingness to answer questions and to provide phone numbers for that purpose.

6. Respondents should be thanked at the end of letters. Offers to provide study results should also be made at the end of letters.

7. Cover letters may need to address the right to refuse to participate and other rights of the respondent regarding voluntary disclosure, university or government clearance processes, etc.

Many researchers recommend that cover letters be as personalized as possible. This entails three considerations:

1. Addresses should contain names of recipients.

2. Recipients should be addressed as "Dear Mr.___" or "Dear Mrs. (Ms.)___."

3. Letters should be signed, preferably with ball point pens by researchers.

Appearance of cover letters is important if good impressions are to be made on respondents. Therefore, ditto and mimeograph duplication should be avoided. An offset process or computerized word-processing should be used on good quality paper. If possible, letterheads of sponsoring agencies or institutions should be used.

Although several introductory educational research texts suggest use of deadlines, no empirical evidence supports their use. Berdie and Anderson (1974) recommended that deadline dates not be used because they increase non-

response. They recommended appeals such as "return the questionnaire at your earliest convenience" or "as soon as possible".

DEALING WITH NON-RESPONSE

The most persistent problem plaguing mail questionnaires is non-response. Low response rates cast doubt on validity of results. Response rates as low as 20 percent have been reported in the literature. Obviously, it is the height of folly to draw inferences from a sample to a population when no data exist for 80 percent of the sample. Yet, the literature (especially theses and dissertations) is replete with reports wherein researchers drew inferences after getting response rates from 20 to 40 percent. A recent study (Frary et al., 1981) demonstrated the differences between respondents and non-respondents in a sample. They state that "to overlook this difference . . . is to give inaccurate and misleading information to the reader of the survey report" (p 49). The burden of proof is on the researcher to demonstrate that there is no difference between respondents and non-respondents on the variables studied. Often, low response rates result from inadequate survey design and conduct techniques. Many methods for increasing response rate have been tried with varying degrees of success. Each of several of the more popular methods are discussed below, starting with those known to be most effective.

Researchers should be aware of cost/benefit ratios associated with these methods of dealing with non-response: If a researcher is well funded and desires a very high response rate, most of the methods recommended should be used, providing they are appropriate to the sample and topic under study. However, if there are several budgetary constraints, costs and benefits should be carefully weighed. Summaries of empirical data are included in the appendix.

Follow-ups

Probably the most effective technique for increasing response rates is follow-ups. Very few mail questionnaire studies are attempted without at least one follow-up. Scott (1961) stated that "the use of follow-ups, or reminders is certainly the most potent technique yet discovered for increasing the response rate" (p. 164).

Erdos (1970) classified respondents into three categories:

1. Eager beavers, who love to answer practically anything.

2. Just people, who are more or less uninterested in answering questionnaires, but who can be induced to do so by an interesting subject, a well constructed questionnaire, the importance of the sender or his survey, an attractive incentive, and/or repeated prodding.

3. Born non-respondents who hate to be bothered by interviewers or mail surveys and who seldom, if ever, answer anything (p. 129).

Follow-up efforts are directed at the second group, because no amount of prodding will induce the third group to respond. There seems to be some justification for such a classification. Robinson and Agisim (1951) studied 369 non-respondents. Only three percent reported that they "don't answer questionnaires." The rest of the non-respondents either mislaid the questionnaires (22.4%), overlooked answering (20.8%), were too busy at the

time (10%) or, significantly, did not receive it (8.8%). Four non-respondents said they enjoyed the questionnaire so much that they kept it.

Content of follow-ups and when they should be made and how many should be made are still matters of debate. Parten (1966) suggested that the first follow-up be mailed about five days after the original mailing. It should serve as a reminder to those who have not mailed questionnaires and as a "thank you" to those who have. As such it should contain: (1) a statement that a questionnaire was sent and that the respondent is a significant part of the study, (2) an expression of thanks if the questionnaire has already been returned, and (3) a request that the respondent complete and mail the questionnaire if he/she has not done so.

The second follow-up mailing should include a letter and a questionnaire because some non-respondents will have misplaced or overlooked the earlier mailing (Parten, 1966). Most researchers agree that mailing of a second follow-up should occur about two to three weeks after the original mailing.

About three weeks after mailing a second follow-up, researchers should examine the response rate to determine whether an additional follow-up is needed. Few researchers recommend sending more than three follow-ups. Alternatives to a third follow-up letter which have had varying success are telegrams, certified or registered follow-up mailings, telephone calls, and interviews.

Advance Notification

Notifying respondents prior to receipt of questionnaires seems to improve response rates in most cases. But, this technique does not seem to be as cost effective as follow-ups. Precontact telephone calls seem to be more effective than letters.

Advance notification by postcard seems to be the most cost effective. Postcards should be mailed about one week before questionnaires are posted. They should inform respondents regarding arrival of the questionnaire, its purpose, and the importance of respondents to the survey. The researcher should indicate that each person's response is significant.

Postage

Type of postage on the envelope which contains the outgoing enclosure and on the return envelope seems to influence response rates. Research seems to indicate that "special delivery . . . is superior to ordinary mail" and "hand-stamped return envelopes are more effective than the postage-permit envelopes" (Linsky, 1975, p. 101). In general, more exotic forms of postage and handling seem to foster higher response rates, possibly because respondents feel that such techniques are commensurate with importance of the study.

Monetary Incentives

Many studies have shown that monetary rewards boost response rates. The optimum amount in terms of cost-effectiveness seems to be 25¢. However, because of inflation, the optimum reward may never be known. It would likely vary with socio-economic class of samples. Rewards should be enclosed in initial mailings, not merely promised. Non-monetary incentives seem not to be as effective as cash rewards.

Planning and Counting the Cost

As Mager (1962) noted, "If you do not know where you're going, you're liable to end up someplace else" (p. 13). It behooves investigators to plan ahead. Early on, the research problem should be identified and delineated, the population (or sample) should be defined and selected, and the method(s) of data collection should be selected. After subjects and survey methods are identified, researchers should construct a timetable. Some items which should be included are:

TIMETABLE

Activity	Date
1. Develop the cover letter, questionnaire and follow-up letters/postcards	
2. Pretest/evaluate instruments (pilot test)	
3. Develop final instruments	
4. Submit to printer	
5. Receive from printer	
6. Prepare instruments and enclosures for initial mailing	
7. Initial mail out	
8. Mail first follow-up (postcard reminder)	
9. Mail second follow-up with another copy of questionnaire	
10. Mail third follow-up (if used)	
11. Place data on computer input devices	
12. Analyze data	
13. Interpret data	
14. Write report	
15. Disseminate findings	

Costs

It is difficult to provide cost guidelines because sample sizes and printing costs vary a great deal. Other costs which should be estimated are typing and printing (including paper), postage, key punching and/or computer terminal time, secretarial services, supplies and incentives (if used). An estimate of printing and mailing costs should include materials for follow-ups.

CONCLUSION

Constructing a valid and reliable mail questionnaire is a difficult and demanding task. Researchers who choose a questionnaire as a research tool must be prepared to expend great amounts of effort in its construction and use.

Data gathered by poor instruments will not support the edifice of inference researchers wish to build. In the past, low quality research provoked comments such as this one from Sieber (1968): "One of the most striking features of educational research literature is the poor quality of survey research reported" (p. 273). Design and use of high quality mail questionnaires will go a long way toward improving the quality of educational survey research.

Judging from the emphasis given in standard educational research texts, researchers may think that their job is over after the data are collected and aggregated. This is an erroneous impression. Researchers, being scientists, are duty bound to analyze the data they collect. It is in this area that many educational researchers fail. Such failures have prompted sociologists, like Trow in Glock (1967), to comment that "there is little consideration of the logic of survey research (in educational research texts)--of the larger problems of design, of analytical strategies, or of the interdependence of the elements in this research. Small wonder, then, that these latter concerns are so rarely in evidence in the published research, when survey research is reduced to questionnaire collection and the reporting of distributions" (p. 320).

Although it is not the purpose of this monograph to address the analysis of survey data, the author feels that is an integral part of the research process. Therefore, educational researchers need to properly analyze survey data. Progress in educational research can only be made when researchers dare to reach behind the data to explore relationships and discover principles. When the facts are merely "left to speak for themselves," too often they stand mute.

LIST OF REFERENCES
Theoretical Material, annotated

Ary, D., Jacobs, L. C. & Razavieh, A. Introduction to research in education. Holt, Rinehart and Winston, 1979.

Babbie, E. R. Survey research methods. Belmont, CA: Wadsworth, 1979.
Relatively broad coverage--extends into the logic and skills necessary to perform and evaluate social research. Topics include index and scale construction, analysis of data, sampling and research design.

Backstrom, C. H. & Hursch, G. D. Survey research. Evanston, IL: Northwestern University Press, 1963.
A general introduction to survey research concentrating on basic concepts and principles. Covers planning surveys, sampling, questionnaire construction and administration.

Benson, L. E. Mail surveys can be valuable. Public Opinion Quarterly, 1946, 10, 234-241.

Berdie, D. R. & Anderson, J. F. Questionnaires: Design and use. Metuchnen, NJ: The Scarecrow Press, 1974.
An excellent book on design and administration of mail questionnaires. Extensive sections on instrument design procedures, boosting response rates, and an annotated bibliography.

Blalock, H. Social statistics. New York: McGraw-Hill, 1960.
Treatment of sampling problems and techniques are well done. Also covers analysis of questionnaire data.

Borg, W. & Gall, M. Educational research (3rd ed.). New York: Longman, Inc., 1979.
Introductory education research text. One chapter (44 pages) on survey research, including interviews and mail questionnaires.

Crano, W. D. & Brewer, M. B. Principles of research in social psychology. New York: McGraw-Hill, 1973.
Discusses rating scale construction and validation.

Dillman, D. A. Mail and telephone surveys. New York: John Wiley & Sons, 1978.
One of the best books available covering the topics of questionnaire design and implementation. Also considers the telephone interview method of data collection.

Erdos, P. L. Professional mail surveys. New York: McGraw-Hill, 1970.
An excellent text on questionnaire design, though slanted toward market research. Covers instrument construction, administration, increasing response rates, and survey cost analysis.

Glock, C. Y. (ed.) Survey research in the social sciences. New York: Russell Sage Foundation, 1967.
Presents a good introduction to the uses and potential of survey research in the social sciences. Particularly noteworthy is Glock's introduction and chapter entitled "Survey Design and Analysis in Sociology." It covers the types of analytic procedures which can be used in the analysis of survey data. Trow's chapter discusses the problems education researchers have encountered in the use of the survey research method. He also presents some significant areas in the educational field which could be fruitfully investigated by means of surveys.

Gordon, R. L. Interviewing strategy, techniques, and factors. Homewood, IL: Dorsey Press, 1969.
Comprehensive consideration of the personal interview technique. The interview is contrasted to mail questionnaires and direct observation techniques.

Heberle, R. On the use of questionnaires in research: Open letter to a graduate student. American Sociological Review, 1951, 45, 549.

Jahoda, M., Deutsch, M. & Cook, S. W. Research methods in social relations. New York: Holt, Rinehart and Winston, 1962.
Basic social science research text with a strong section on sampling and mail questionnaires.

Leslie, L. L. Increasing response rates to long questionnaires. Journal of Educational Research, 1970, 63, 347-350.
The author offers methods to help increase the response rate in long questionnaires.

Levine, S. & Gordon, G. Maximizing returns on mail questionnaires. Public Opinion Quarterly, 1958, 22, 568-575.
The authors suggest a number of methods to improve response rate.

Mager, R. F. Preparing instructional objectives. Belmont, CA: Fearon Publishers, 1962.

Mouly, G. J. Educational research. Boston: Allyn & Bacon, 1978.

Moser, C. A. & Kalton, G. Survey methods in social investigation. London: Heinemann Educational Books Ltd., 1972.
A classic text on survey research, with excellent chapters on mail questionnaires (about 100 pages) and sampling considerations.

Oppenheim, A. N. Questionnaire design and attitude measurement. New York: Basic Books, 1966.
Extensive treatment of questionnaire design issues. Particularly strong section on attitude measurement and projective techniques.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. The measurement of meaning. Urbana, IL: University of Illinois Press, 1957.
Authors discuss the construction and use of the semantic differential.

Parten, M. Surveys, polls and samples. New York: Harper & Bros., 1966.
A general text on survey research though a bit dated. Contains a good section on mail questionnaire design and sampling procedures.

Payne, S. L. The art of asking questions. Princeton, NJ: Princeton University Press, 1951.
One of the best texts available on writing questions. Chapter 14 contains a summary/checklist of many of the suggestions made in the text.

Robinson, R. A. & Agisim, P. Making mail surveys more reliable. Journal of Marketing, 1951, 15, 415-424.
The authors deal with many different suggestions to increase response rates. Suggestions are based on a questionnaire administered to male subscribers to Colliers' magazine.

Scott, C. Research on mail surveys. Journal of the Royal Statistical Society, 1961, series A, 41, 143-205.
Comprehensive review of literature on questionnaire design and use, though a bit dated now.

Sellitz, C. Research methods in social relations. New York: Holt, Rinehart and Winston, 1976.
Authors include an excellent section entitled "Questionnaire Construction and Interview Procedures" found in the appendices. The discussion of the different classifications of questions is particularly helpful.

Severy, L. J. Procedures and issues in the measurement of attitudes. T. M. Rept. 30. Princeton, NJ: Educational Testing Service, 1974.
A good introduction to development of a scale including validity and reliability.

Stevens, S. S. Handbook of experimental psychology. New York: John Wiley & Sons, 1951.
Author describes four types of scales: nominal, ordinal, interval, ratio.

Thorndike, E. L. & Lorge, I. The teacher's word book of 30,000 words. New York: Teachers College, Columbia University, 1944.

Thurstone, L. L. & Chave, E. J. The measurement of attitude. Chicago: University of Chicago Press, 1929.
Thurstone's method of equal-appearing intervals is discussed.

Travers, R. W. An introduction to educational research (4th ed.). New York: Macmillan Pub. Co., 1978.
Travers' chapter on survey research is helpful.

Tuckman, B. W. Conducting educational research. New York: Harcourt Brace Jovanovitch, 1978.

U.S. Department of Commerce, Bureau of the Census. Index to survey methodology literature, Technical monograph #34. Washington, DC: U.S. Government Printing Office, 1974.
A 2,500-entry bibliography on survey research methodology including journal articles, Bureau of Census publications and documents, research reports, conference papers and selected textbooks.

Empirical Material

1. Adams, J. S. An experiment on question and response bias. Public Opinion Quarterly, 1956, 20, 593-598.

2. Andreasen, Alan R. Personalizing mail questionnaire correspondence. Public Opinion Quarterly, 1970, 30, 273-277.

3. Aiken, L. R. General questionnaire analysis program. Educational and Psychological Measurements, 1978, 38, 167-169.

4. Bachrach, S. D. & Scoble, H. M. Mail questionnaire efficiency: Controlled reduction of non-response. Public Opinion Quarterly, 1967, 31, 265-271.

5. Barnette, W. W. The non-respondent problem in questionnaire research. Journal of Applied Psychology, 1950, 34, 397-398.

6. Bauer, E. J. Response bias in a mail survey. Public Opinion Quarterly, 1947, 11, 594-600.

7. Belkin, M. & Lieberman, S. Effect of question wording on response distribution. Journal of Marketing Research, 1967, 43, 12-13.

8. Bender, D. H. Colored stationery in direct mail advertising. Journal of Applied Psychology, 1957, 41, 161-164.

9. Berdie, D. R. Questionnaire length and response rate. Journal of Applied Psychology, 1973, 58, 278-280.

10. Blair, W. S. How subject matter can bias a mail survey. Mediascope, 1964, 70-72.

11. Boek, W. E. & Lade, J. H. A test of the usefulness of postcard technique in a mail questionnaire study. Public Opinion Quarterly, 1963, 27, 303-306.

12. Boyd, H. W. & Westfall, R. Interviewers as a source of error in surveys. Journal of Marketing, 1955, 19, 311-324.

13. Boyd, H. W. & Westfall, R. Interviewer bias revisited. Journal of Marketing, 1955, 19, 311-324.

14. Boyd, H. W. & Westfall, R. Interviewer bias once more revisited. Journal of Marketing Research, 1970, 7, 249-253.

15. Bradt, K. The usefulness of a postcard technique in a mail questionnaire study. Public Opinion Quarterly, 1955, 19, 218-222.

16. Brennan, R. Trading stamps as an incentive. Journal of Marketing, 1958, 22, 306-307.

17. Brown, M. L. Use of a postcard query in mail surveys. Public Opinion Quarterly, 1965, 29, 635-637.

18. Brunner, A. G. & Carroll, S. J. The effect of prior notification on the refusal rate in fixed address surveys. Journal of Advertising Research, 1969, 9, 42-44.

19. Butler, J. Effect of signed and unsigned questionnaires for both sensitive and non-sensitive items. Journal of Applied Psychology, 1973, 57, 348-349.

20. Cahalan, D. Effectiveness of a mail questionnaire technique in the army. Public Opinion Quarterly, 1951, 13, 562.

21. Campbell, D. T. Bias in mail surveys. Public Opinion Quarterly, 1949, 13, 562.

22. Carpenter, E. W. Personalization in mail surveys of the general public: A reassessment in light of recent innovations. Public Opinion Quarterly, 1974, 38, 45-47.

23. Case, P. How to catch interviewer errors. Journal of Advertising Research, 1971, 11, 39-43.

24. Champion, D. J. & Sear, A. M. Questionnaire response rate: A methodological analysis. Social Forces, 1966, 47, 33-34.

25. Clausen, J. A. & Ford, R. N. Controlling bias in mail questionnaires. Journal of the American Statistical Association, 1947, 42, 497-511.

26. Cox, E., Anderson, W. T., & Tulcher, D. Reappraising mail survey response rates. Journal of Marketing Research, 1974, 11, 413-417.

27. Cox, W. F. Response patterns in mail surveys. Journal of Marketing Research, 1966, 2, 392-397.

28. Deming, W. E. On a probability mechanism to attain an economic balance between the resultant error of response and the bias of non-response. Journal of the American Statistical Association, 1953, 48, 363-370.

29. Deutscher, I. Physician's reaction to a mailed questionnaire: A study in resistentialism. Public Opinion Quarterly, 1956, 20, 599-604.

30. Dillman, D. A. Increasing mail questionnaire response in large samples of the general public. Public Opinion Quarterly, 1956, 36, 254-257.

31. Dillman, D. A. & Frey, J. H. Contribution of personalization to mail questionnaire response as an element of a previously tested method. Journal of Applied Psychology, 1974, 59, 297-301.

32. Donald, M. N. Implications of non-response for the interpretation of mail questionnaire data. Public Opinion Quarterly, 1960, 24, 99-114.

33. Doob, A. N. Effects of sponsor and prepayment on compliance with a mailed request. Journal of Applied Psychology, 1973, 57, 346-347.

34. Dunlap, J. W. The effect of color in direct mail advertising. Journal of Applieu Psychology, 1965, 49, 280-281.

35. Durant, H. & Maas, I. Who doesn't answer? Bulletin of the British Psychological Society, 1956, 29, 33-34.

36. Eckland, B. Effects of prodding to increase mail back returns. Journal of Applied Psychology, 1965, 49, 165-169.

37. Erdos, P. L. & Regier, J. Visible versus disguised keying on questionnaires. Journal of Advertising Research, 1977, 17, 31-35.

38. Etzel, M. J. & Walker, B. J. Effects of alternative follow-up procedures on mail survey response rates. Journal of Applied Psychology, 1974, 59, 219-221.

39. Feld, H. S. Effects of sex of investigator on mail survey response rates and response bias. Journal of Applied Psychology, 1975, 60, 772-773.

40. Ferber, R. Item non-response in a consumer survey. Public Opinion Quarterly, 1966, 30, 399-415.

41. Ferber, R. The problem of bias in mail returns: A solution. Public Opinion Quarterly, 1948, 12, 669-676.

42. Ferber, R. & Sudman, S. Effects of compensation in consumerexpenditure studies. Faculty Working Paper #109, College of Commerce and Business Administration, University of Illinois at Urbana-Champaign, 1973.

43. Ferris, A. L. A note on stimulating response to questionnaires. American Sociological Review, 1951, 16, 247-249.

44. Ford, N. M. The advance letter in mail surveys. Journal of Marketing Research, 1967, 4, 202-204.

45. Ford, N. M. Questionnaire appearance and response rates in mail surveys. Journal of Advertising Research, 1968, 8, 43-45.

46. Ford, R. N. & Zeisel, H. Bias in mail survey cannot be controlled by one mailing. Public Opinion Quarterly, 1949, 13, 495-501.

47. Frank, R. E., Massey, W. F., & Lodahl, T. M. Purchasing behavior and personal attributes. Journal of Advertising Research, 1969, 9, 15-24.

48. Frankel, L. R. How incentives and subsamples affect the precision of mail surveys. Journal of Advertising Research, 1960, 1, 1-5.

49. Franzen, R. The construction of a questionnaire. Market Research, May 1936, 17-19.

50. Frary, J. M., Elson, D. E. & Gerken, S. H. Using mail questionnaires in vocational education research: The need for follow-up. Journal of Education Research, 1981, 6, 41-54.

51. Frazier, G. & Bird, K. Increasing the response of a mail questionnaire. Journal of Marketing, 1958, 22, 186-187.

52. Friedman, H. H. & Goldstein, L. Effect of ethnicity of signature on the rate of return and content of a mail questionnaire. Journal of Applied Psychology, 1975, 60, 770-771.

53. Fuller, C. Effect of anonymity on return rate and response bias in a mail survey. Journal of Applied Psychology, 1974, 59, 292-296.

54. Gelb, B. D. Incentives to increase survey returns--social class considerations. Journal of Marketing Research, 1976, 12, 107-109.

55. Giles, W. F. & Feld, H. S. Effects of amount, format and location of demographic information on questionnaire return rates. Personnel Psychology, 1959, 31, 549-559.

56. Goldstein, H. & Kroll, B. H. Methods of increasing mail response. Journal of Marketing, 1957, 21, 55-57.

57. Goldstein, L. & Friedman, H. H. A case for double postcards in surveys. Journal of Advertising Research, 1975, 15, 43-47.

58. Goodstadt, M. S. Mail survey response rates--their manipulation and impact. Journal of Marketing Research, 1977, 14, 391-395.

59. Gullahorn, J. & Gullahorn, J. husband/wife team (wife changed name) An investigation of the effects of three factors on response to mail questionnaires. Public Opinion Quarterly, 1963, 27, 294-296.

60. Hackler, J. & Bourgette, P. Dollars, dissonance, and survey returns. Public Opinion Quarterly, 1973, 37, 276-281.

61. Hammond, E. C. Isolation in relation to type and amount of smoking. American Statistical Society, 1959, 54, 35-51.

62. Hancock, J. W. An experimental study of four methods of measuring unit costs of obtaining attitude toward the retail store. Journal of Applied Psychology, 1940, 24, 213-230.

63. Harris, J. R. & Guffey, H. N. Questionnaire returns: Stamps versus business reply envelopes revisited. Journal of Marketing Research, 1978, 15, 290-293.

64. Heaton, E. E. Increasing mail questionnaire returns with a preliminary letter. Journal of Advertising Research, 1965, 5, 36-39.

65. Hochstim, J. R. A critical comparison of three strategies of collecting data from households. Journal of the American Statistical Association, 1967, 62, 976-989.

66. Hochstim, J. R. & Athanasopoulos, D. A. Personal follow-up in a mail survey: Its contribution and its cost. Public Opinion Quarterly, 1970, 34, 69-81.

67. Houston, M. & Ford, N. M. Broadening the scope of methodological research on mail surveys. Journal of Marketing Research, 1976, 13, 397-403.

68. Houston, M. & Ford, N. M. & Jefferson, R. The negative effect of personalization on response patterns in mail surveys. Journal of Marketing Research, 1975, 7, 114-117.

69. Huck, S. H. & Gleason, E. M. Using monetary inducement to increase response rates from mail surveys: A replication and extension of previous studies. Journal of Applied Psychology, 1974, 59, 635-636.

70. Hunt, S. D., Sparkman, R. D. & Wilcox, J. B. The pretest in survey research: Issues and preliminary findings. Journal of Marketing Research, 1982, 19, 269-273.

71. Jackson, R. M. & Rothney, J. W. M. A comparative study of the mail questionnaire. Personnel and Guidance Journal, 1961, 39(7), 569-571.

72. Jolson, M. A. How to double or triple mail survey response rates. Journal of Marketing, 1977, 41, 78-81.

73. Jones, W. H. & Linda, G. Multiple criteria effects in a mail survey experiment. Journal of Marketing Research, 1978, 15, 280-284.

74. Kawash, M. B. & Aleamoni, L. M. Effect of personal signature on the initial rate of return of a mailed questionnaire. Journal of Applied Psychology, 1971, 55, 589-592.

75. Kephart, W. M. & Bressler, M. Increasing the responses to mail questionnaires. Public Opinion Quarterly, 1958, 22, 123-132.

76. Kerin, R. A. & Peterson, R. A. Personalization, respondent anonymity, and response distortion in mail surveys. Journal of Applied Psychology, 1977, 62, 86-89.

77. Kernan, W. B. Are bulk-rate occupants really unresponsive. Public Opinion Quarterly, 1971, 35, 420-424.

78. Kimball, A. E. Increasing the rate of return in mail surveys. Journal of Marketing, 1961, 25, 63-65.

79. Knox, J. B. Maximizing responses to mail questionnaires. Public Opinion Quarterly, 1951, 15, 366-367.

80. Knudson, D. O., Pope, H. & Irish, D. P. Response differences to questions on sexual standards: An interview questionnaire comparison. Public Opinion Quarterly, 1967, 31, 290-297.

81. Landy, F. J. & Bates, F. Non-effect of three variables on mail survey response rates. Journal of Applied Psychology, 1973, 58, 147-148.

82. Larson, R. F. & Catton, W. R. Can the mail-back bias contribute to a study's validity. American Sociological Review, 1959, 24, 243-245.

83. Leslie, L. L. Increasing response rates to long questionnaires. Journal of Educational Research, 1970, 63, 347-350.

84. Levine, S. & Gordon, G. Maximizing returns on mail questionnaires. Public Opinion Quarterly, 1958, 22, 568-575.

85. Linsky, A. S. Stimulating responses to mailed questionnaires: A review. Public Opinion Quarterly, 1975, 39, 82-101.

86. Longworth, D. S. Use of a mailed questionnaire. American Sociological Review, 1953, 18, 310-313.

87. Lorei, T. W. & Gorel, L. Comparison of ex-mental patient employment information obtained by mail and by interview. Journal of Counseling Psychology, 1967, 14, 458-461.

88. Lubin, B., Levitt, E. E. & Zuckerman, M. Some personality differences between respondents and non-respondents to a survey questionnaire. Journal of Consulting Psychology, 1962, 26, 192-197.

89. Maloney, P. W. Comparability of personal attitude scale administration with and without incentive. Journal of Applied Psychology, 1954, 38, 238-239.

90. Martin, J. D. Mail questionnaire response induction: A negative induction experiment. Ontario, Canada: Lakehead University, n.d.

91. Mason, W. S., Dressel, R. J. & Bain, R. K. An experimental study of factors affecting response to a mail survey of beginning teachers. Public Opinion Quarterly, 1961, 25, 296-299.

92. Matteson, M. T. Type of transmittal letter and questionnaire color as two variables influencing return rate in a mail survey. Journal of Applied Psychology, 1974, 59, 635-636.

93. McDonagh, E. C. & Rosenblum, A. L. A comparison of mailed questionnaires and subsequent structured interviews. Public Opinion Quarterly, 1965, 29, 131-136.

94. May, R. C. What approach gets the best return rate in mail surveys. Industrial Marketing, 1960, 45, 50-51.

95. Mitchell, W. Factors affecting the rates of return on mailed questionnaires. American Statistical Association Journal, 1939, 683-692.

96. Myers, J. H. & Haug, A. F. How a preliminary letter affects mail survey returns and costs. Journal of Advertising Research, 1969, 9, 37-39.

97. Nevin, J. R. & Ford, N. M. Effects of a deadline and a veiled threat on mail survey techniques. Journal of Applied Psychology, 1976, 61, 116-118.

98. Newman, S. W. Differences between early and late respondents to a mailed survey. Journal of Advertising Research, 1964, 2, 11-16.

99. Nichels, R. C. & Meyer, M. A. Timing postcard follow-ups in mail questionnaire surveys. Public Opinion Quarterly, 1966, 30, 306-307.

100. Nielsen, H. D. Response bias in follow-up studies of college students. Research in Higher Education, 1978, 9, 97-103.

101. Nuckols, R. C. Personal interviews or panels. Journal of Marketing Research, 1964, 1, 11-16.

102. O'Dell, W. F. Personal interviews or mail panel. Journal of Marketing, 1962, 26, 34-39.

103. Ognibene, P. Traits affecting questionnaire response. Journal of Advertising Research, 1970, 10, 18-20.

104. Parsons, R. J. & Medford, T. S. The effects of advance notice in mail surveys of homogeneous groups. Public Opinion Quarterly, 1972, 36, 258-259.

105. Pearlin, I. The appeals of anonymity in questionnaire response. Public Opinion Quarterly, 1961, 25, 640-647.

106. Peterson, R. A. An experimental investigation of mail survey responses. Journal of Business Research, 1975, 3, 199-210.

107. Phillips, W. M. Weakness of the mail questionnaire: A methodological study. Sociology and Social Research, 1951, 35, 260-267.

108. Price, D. O. On the use of stamped return envelopes with mail questionnaires. American Sociological Review, 1950, 15, 672-673.

109. Pucel, D. J., et al. Questionnaire follow-up returns as a function of incentive and respondent characteristics. Vocational Guidance Quarterly, 1971, 19, 188-193.

110. Reid, S. Respondents and non-respondents to mail questionnaires. Educational Research Bulletin, 1942, 21, 87-97.

111. Reuss, C. F. Differences between persons responding and not responding to a mailed questionnaire. American Sociological Review, 1943, 8, 433-438.

112. Robin, S. A procedure for securing returns to mail questionnaires. Sociology and Social Research, 1965, 50(1), 24-35.

113. Robins, L. N. The reluctant respondent. Public Opinion Quarterly, 1963, 27, 276-286.

114. Robinson, R. A. & Agisim, P. Making mail surveys more reliable. Journal of Marketing, 1951, 15, 415-424.

115. Roeher, G. A. Effective techniques in increasing response to mail questionnaires. Public Opinion Quarterly, 1963, 27, 299-302.

116. Rosen, R. Anonymity and attitude measurement. Public Opinion Quarterly, 1960, 24, 675-680.

117. Russell, S. R., Konrad, R. & Kalozny, A. D. Influencing the respondent: An experiment in maximizing the response rate of mail questionnaires. Sociological Abstracts, 1970, 18, 22.

118. Schwirian, K. P. & Blaine, H. R. Questionnaire return bias in the study of blue collar workers. Public Opinion Quarterly, 1966, 30, 656-663.

119. Schyberger, B. W. A study of interviewer behavior. Journal of Market Research, 1967, 4, 32-35.

120. Scott, C. Research on mail suveys. Journal of the Royal Statistical Society, 1961, 124, 143-191.

121. Shuttleworth, F. K. Sampling errors involved in incomplete returns to mailed questionnaires. Psychological Bulletin, 1950, 37, 437.

122. Simon, R. Responses to personal and form letters in mail surveys. Journal of Advertising Research, 1967, 7, 28-30.

123. Sletto, R. F. Pretesting of questionnaires. American Sociological Review, 1940, 5, 193-200.

124. Slocum, W. L., et al. Increasing responses to questionnaires and structured interviews. American Sociological Review, 1956, 21, 221-225.

125. Smith, E. M. & Mason, J. B. Influence of instruction on respondent error. Journal of Marketing Research, 1970, 7, 254-255.

126. Smith, K. Signing off in the right color can boost mail survey response. Industrial Marketing, 1977, 62, 59.

127. Snelling, W. R. The impact of a personalized questionnaire. Journal of Educational Research, 1969, 60, 126-129.

128. Stafford, J. E. Influence of preliminary contact on mail returns. Journal of Marketing Research, 1966, 3, 410-411.

129. Stanton, F. Notes on the validity of mail questionnaire returns. Journal of Applied Psychology, 1939, 23, 95-104.

130. Suchman, E. A. An analysis of bias in survey research. Public Opinion Quarterly, 1962, 26, 102-111.

131. Suchman, E. A. & McCandless, B. Who answers questionnaires. Journal of Applied Psychology, 1940, 24, 758-769.

132. Sudman, S. & Ferber, R. Experiments in obtaining consumer expenditures by diary methods. Journal of the American Statistical Society, 1971, 66, 725-735.

133. Veiga, J. F. Getting the mail questionnaire returned: Some practical research considerations. Journal of Applied Psychology, 1974, 59, 217-218.

134. Vincent, C. E. Socioeconomic status and familial variables in mail questionnaire responses. American Journal of Sociology, 1964, 69, 647-653.

135. Vocino, T. Three variables in stimulating responses to the mailed questionnaire. Journal of Marketing, 1977, 41, 76-77.

136. Waisonen, F. B. A note on the response to a mailed questionnaire. Public Opinion Quarterly, 1954, 18, 210-212.

137. Wallace, D. A case for and against mail questionnaires. Public Opinion Quarterly, 1954, 18, 40-52.

138. Watson, J. J. Improving the response rate in mail research. Journal of Advertising Research, 1965, 5, 45-50.

139. Weilbacher, W. & Walsh, R. H. Mail questionnaires and the personalized letter of transmittal. Journal of Marketing, 1952, 16, 331-336.

140. Wiseman, F. Methodological bias in public opinion surveys. Public Opinion Quarterly, 1972, 36, 105-108.

141. Wortuba, T. R. Monetary inducements and mail questionnaire response. Journal of Marketing Research, 1966, 3, 398-400.

142. Zehner, R. B. & McCalla, M. E. Response rates and prior letters. Journal of Marketing Research, 1977, 17, 31-35.

Table 1

Effects of Preliminary Notification on Mail Questionnaire Response Rates

Study and Methods	N		Control	Experimental	Increase
By Mail					
Kephart & Bressler (75)	100		52.0%	53.0%	01.0%
Scott (120)	175	British home dwellers	41.7	44.6	02.9
Ford (44)	474	Illinois households	32.9	39.6	06.7
Ford (44)	786	Illinois households	15.3	21.0	05.7
Stafford (128)	391	University students	20.5	43.7	23.2
Myers & Haug (95)	350	Telephone directory	28.9	37.0	08.1
Pucel (109)	100	VoTech. graduates	42.9	51.5	08.6
Heaton (64)	41		27.1	48.7	21.6
Parsons & Medford (104)	236	Male MBA alumni	a	a	00.0
Wiseman (140)	320	Suburb residents	a	a	20.0
By telephone					
Kerin & Peterson (76)	659	Credit applicants	38.0	47.0	09.0
Stafford (125)	1247	University students	20.5	68.2	47.7
Waisanan (136)	300	TV & non-TV households	62.0	70.0	08.0
By earlier personal contact					
Durant & Maas (35)	236		74.0	84.0	10.0
Lorei & Gorel (87)	1193	Ex mental patients	84.3	89.2	04.9

a - no details given (Source: adapted from Linsky, A. Stimulating responses to mailed questionnaires: a review. Public Opinion Quarterly, 1975, 39, 82-102. Reprinted by permission.)

Table 2

Cumulative Effect of Follow-up Efforts on Mail Questionnaire Response Rates by Wave

Researcher	N	Sample	Cumulative response rate (%) 1st wave	2nd wave	3rd wave	4th wave	5th wave	6th wave	Final rate
Levine & Gordon (84)	170	Blue cross plan directors	a	90.0	a	100.0bce	-	-	100.0
Suchman & McCandless (130)	600	Telephone subscribers	16.8	45.2	98.5	b	-	-	98.5
Eckland (36)	a	a	a	a	67.0	95.0bd	-	-	95.0
Scott (120)	1050	British Tel. subscribers	74.8	a	95.6	-	-	-	95.6
Scott (120)	1556	British home dwellers	a	85.9	93.2	-	-	-	93.2
Bachrach & Scoble (4)	624	Political contributors	a	a	63.5	a	83.0	85.0	85.0
Donald (32)	2768	League of Women Voters	46.2	58.4	67.2	77.3	-	-	77.3
Goldstein & Kroll (56)	4716	General hospitals	a	a	a	72.8	-	-	72.8
Clausen & Ford (25)	a	WW II veterans	23.0	49.7	-	-	-	-	49.7
Watson (138)	500	Business Week subscribers	30.0	46.0f	-	-	-	-	46.0
Watson (138)	500	Business Week subscribers	30.0	37.0g	-	-	-	-	37.0
Sletto (123)	300	University graduates	a	a	-	-	-	-	*
Ferris (43)	241	University teachers	a	a	-	-	-	-	*
Robinson & Agisim (114)	5960	Magazine subscribers	a	10-12	-	-	-	-	a

Follow-up -- a-no details given, b-telephone, c-telegram, d-special delivery and certified mail, e-advance letter, f-2 day

* No difference

(Source: Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing Research, 1975, 12, 440-453. Reprinted by permission.)

Table 3

Effects of Questionnaire Length on Mail Questionnaire Response Rates

Researcher	N	Sample	Experimental Variable	Response Rate	Exp. Results
Scott (120)	4,536	British home dwellers	2 short questionnaires	90.5%	NS
			1 long (2 short combined)	89.6	
Sletto (123)	300	University alumna	10 pages	68.0	NS
			25 pages	60.0	
			35 pages (1 & 2 combined)	63.0	
Mason, Dressel, & Bain (91)	370	Beginning teachers	6 pages (62 items)	83.8	NS
			8 pages (92 items)	81.6	
Brown (17)	262	Doctors	Post card	68.0	NS
			2 pages	53.0	
Stanton (129)	11,169	School teachers	Post card	50.2	S
			3 pages	28.3	
Clausen & Ford (25)	a	WW II veterans	3-6 pages	23.0	S
			5-8 pages	42.7	
Nuckols (101)	1,200	Panel members	Long (a)	71.0	a
Champion & Sear (24)	2,700	General public	3 pages	27.5	S
			6 pages	38.4	
			9 pages	39.4	
Hochstim & Athenasopoulos (67)	169		14 pages	83.0	NS
			21 pages	85.0	

a - no details given
NS - not significant
S - significant

(Source: adapted from Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing Research, 1975, 12, 440-453. Reprinted by permission.)

Table 4

Effects of Postage and Mailing Class on Mail Questionnaire Response Rates

Study and Type of Mail	Type of Postage				N
Outgoing Mail	Special Delivery	Air Mail	First Class	Third Class	
Kephart & Bressler (75)	66.0%	60.0%	52.0%	-	100
Gullahort & Gullahorn (59)	-	-	51.0	49.0	3619
Watson (138)	-	30.0	-	30.0	1000
	Airmail Special Delivery			Government Franked Envelope	
Clausen & Ford (25)	61.0			36.0	400
Return Mail	Hand Stamped			Permit (bulk)	
Watson (138)	30.0			21.0	1000
Kimball (79)	34.8			26.0	500
_____	44.6a			38.2a	500
Hammond (61)	40.4			31.5	100
Robinson & Agisim (113)	74.0			66.0	1500
Champion & Sear (24)	36.6			33.4	400
Gullahorn & Gullahorn (59)	52.0			48.0	3654
	Combination of 1, 2, 3¢ stamps			Single Stamp	
Longworth (86)	21.0			14.0	50
Watson (138)	35.0			30.0	1000
	Stamped Envelope			Unstamped Envelope	
Price (108)	26.3			17.3	80
	Stamped Envelope			No Envelope	
Ferris (43)	90.1			25.8	100

Table 5

Effects of Personalization on Mail Questionnaire Response Rates

Researcher	N	Sample	Experimental Variable	Response Rate	Experimental Results
Kawash & Aleamoni (74)	3091	Univ. Faculty	Handwritten signature vs. facsimile signature	a a	NS
Clausen & Ford (25)	a	WW II veterans	Personal salutation vs. Dear Veteran	a a	NS
			Handwritten signature vs. facsimile signature	a a	NS
Kimball (78)	3000	Mfg. personnel	Personal salutation vs. Dear Sir	a a	NS
Weilbacher & Walsh (139)	a	Prof. fraternity	Personal salutation & handwritten signature vs. impersonal salutation & facsimile signature	a a	NS
Roeher (115)	400	Charitable donors	Titled signature vs. untitled signature	81.0 55.0	S
Frazier & Bird (51)	1561	Idaho residents	Postscript (handwritten) vs. no postscript	31.0 25.0	S
Longworth (86)	50	Tel. subscribers	Typed letter vs. form letter	a a	5.0% inc.
Houston & Jefferson (68)	400	New car buyers	Anonymous questionnaire vs. identified questionnaire	68.0 99.0	S
Simon (122)	500	General public	Typed letter vs. form letter	60.0 53.0	7.0% inc.
	500	General public	Typed letter vs. form letter	48.0 40.0	8.0% inc.

Researcher	N	Sample	Experimental Variable	Response Rate	Experimental Results
Carpenter (21)	500		a	a	7.0% inc.
Landy & Bates (81)	810	General public	Ditto vs. form vs. mimeo letter	a	NS
Dillman & Frey (31)	891	University alums.	Typed vs. ditto letter	a	9.0% inc.

a - no details given NS - not significant S - significant

Source: adapted from Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing Research, 1975, 12, 440-453. Reprinted by permission.

Table 5 Continued

Study and Type of Mail	Type of Postage		N
Scott (120)	Stamped Envelope 93.3	Franked, Addressed Label 89.2	400
Kernan (77)	Stamped Envelope - 1st class 45.0	Stamped Envelope - 3rd class 43.0	400

(Source: Linsky, A. Stimulating responses to mailed questionnaires: a review. Public Opinion Quarterly, 1975, 39, 82-102. Reprinted by permission.)

Table 4 Continued

Table 6

Influence of Monetary Rewards on Mail Questionnaire Response Rates

Researcher	Cash Rewards $1.00	.50¢	.25¢	.20¢	.10¢	.05¢	.01¢	Promise of reward	No reward	N
Kimball (68)	-	-	-	-	45.0%	-	-	-	35.0%	500
———	-	-	-	-	38.0	-	-	-	26.0	500
Erdos (37)	54.0%	-	40.0%	-	-	-	-	-	23.0	200
———	-	-	58.0	-	-	-	-	-	35.0	4000
———	-	-	56.0	-	-	-	-	-	34.0	1876
Maloney (89)	-	-	86.0	-	-	-	-	-	54.0	74
Wortruba (141)	-	-	40.0	-	-	-	-	18.0%	20.0	50
Kephard & Bressler (75)	-	-	70.0	-	57.0	54.0%	55.0%	-	52.0	100
Hancock (62)	-	-	47.0	-	-	-	-	18.0	10.0	3726
Watson (135)	-	-	48.0	-	40.0	-	-	-	30.0	1000
Newman (98)	53.0	-	47.0	-	-	-	-	-	29.0	a
———	61.0	-	37.0	-	-	-	-	-	a	a
Gelb (54)	-	54.0%	-	-	-	-	-	45.0	a	a
———	-	15.0	-	-	-	-	-	25.0	a	a
Hackler & Bourgette (60)	71.0	-	-	-	-	-	-	-	39.0	a
Doob, Freedman & Carlsworth (33)	-	-	-	67.4%	-	53.2	-	-	30.1	a
———	-	-	-	68.5	-	61.7	-	-	52.1	a

a - no details given.

(Source: Linsky, A. Stimulating responses to mailed questionnaires: a review. Public Opinion Quarterly, 1975, 39, 82-102. Reprinted by permission.)

Table 7

Effects of Increasing Monetary Incentive on Mail Questionnaire Response Rates

	Newman (95)		Frankel (48)	
	Incentive	Incremental Response	Incentive	Incremental Response
1st wave	$1.00	60.3%	.25¢	a
2nd wave	2.00	15.2	$1.00	a
3rd wave	-0-	3.2	5.00	a
Total Response		78.7%		81.0%

a - no details given

(Source: Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing research, 1975, 12, 440-453. Reprinted by permission.)

Table 8

Effects of Survey Sponsorship on Mail Questionnaire Response Rates

Researcher	N	Sample	Sponsorship	Response Rate	Experimental Results
Scott (120)	3024	British home dwellers	Government agency	93.3%	NS
			University	88.7	
			Commercial firm	90.1	
Brunner & Carroll (18)	156	Maryland residents	University	72.5	S
			Commercial firm	46.1	
Baur (6)	600	WW II veterans	VA sponsorship	a	Possibly biased
Doob, Friedman, & Carlsworth (33)	804	City phone directory	University	51.1	S
			Commercial firm	30.2	

a - no details given NS - not significant S - significant

(Source: adapted from Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing Research, 1975, 12, 440-453. Reprinted by permission.)

Table 9

Effect of Anonymity of Mail Questionnaire Response Rates

Researcher	N	Sample	Experimental Variable	Experimental Results
Pearlin (106)	a	Employees	Optional signature vs. non-signers	NS
Mason, Dressel & Bain (91)	a	Beginning teachers	Name, address, & code # vs. only code	NS
Rosen (116)	a	a	Anonymity vs. identification	NS
Scott (120)	3024	British householders	Optional signature vs. non-signers	NS
Cox, Anderson, & Fulcher (26)	4000	Telephone subscribers	Name & address vs. anonymity	S (7.5%)
Butler (19)	668	College seniors	Signed vs. unsigned	NS
Fuller (53)	a	Naval officers & enlisted	Identified vs. anonymous	NS

a - no details given NS - not significant S - significant

(Source: adapted from Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing Research, 1975, 12, 440-453. Reprinted by permission.)

Influence of Size, Layout, Reproduction, and Color on Mail Questionnaire Response Rates

Researcher	N	Sample	Technique	Response Rate	Exp. Results
Scott (120)	10,221	British motorcyclists	Questionnaire on cover letter vs. questionnaire on separate sheet	95.8% 93.6	S
Ford (44)	1,556	Illinois households	2 page printed vs. 2 page mimeo	a a	NS
Gullahorn & Gullahorn (59)	a	Grant recipients	Questionnaire on green paper vs. questionnaire on white paper	51.0 49.0	NS
Bender (8)	1,620	Officer & enlisted	Questionnaire on blue paper with white cover letter (officers) vs. questionnaire on pink paper with white cover letter (enlisted)	11.5 11.6	NS

Table 10

(Source: adapted from Kanuk, L. & Berenson, C. Mail surveys and response rates: a literature review. Journal of Marketing Research, 1975, 12, 440-453. Reprinted by permission.)